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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,498	11/12/2003	Stephen D. Allen	3548.2.2	7229
21552	7590	11/15/2005		
MADSON & METCALF GATEWAY TOWER WEST SUITE 900 15 WEST SOUTH TEMPLE SALT LAKE CITY, UT 84101			EXAMINER WEIER, ANTHONY J	
			ART UNIT	PAPER NUMBER
			1761	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/706,498	<b>Applicant(s)</b> ALLEN ET AL.	
	<b>Examiner</b> Anthony Weier	<b>Art Unit</b> 1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-117 is/are pending in the application.
- 4a) Of the above claim(s) 62-117 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-18 and 20-61 is/are allowed.
- 6) ☒ Claim(s) 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

Applicant's election without traverse of Group I, Species A in the reply filed on 8/22/05 is acknowledged. It should be noted also that claims 105-108 were inadvertently omitted from Species C.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "standard" regarding temperature is indefinite in that it is not clear as to what range of temperatures is encompassed by same. What is standard to one individual or one locality may not be to another.

***Allowable Subject Matter***

Claims 1-18 and 20-61 are allowed.

Claim 19 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims

***Examiner's Reasons for Allowance***

The prior art of record does not disclose nor teach the particular process of admixing a fruit or vegetable processing waste source with an organic solvent and

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surfactant to provide the particular effect as claimed including providing a carotenoid and surfactant combination wherein the slurry created therein is then treated with a second organic solvent, separated into liquid and solid fractions wherein a first portion is then separated from the liquid fraction, said first portion comprising a solution of the second organic solvent and the carotenoid and surfactant combination. The same applies to claim 35 that more specifically sets forth the same processing steps, components and amounts of same (e.g. ethanol as the first organic solvent; carbon disulfide as the second solvent, and the treatment of a tomato waste source). Shi does set forth the well known removal of lycopene from fruits and vegetables including tomatoes by extraction with a variety of solvents including carbon disulphide. However, there is no disclosure nor teaching therein or anywhere else in the prior art of record to modify such conventional processing to include the treatment of said fruit and vegetable with surfactant and a first organic solvent and, furthermore, wherein the surfactant and carotenoid forms a combination followed by the aforementioned processing steps. JP 08120187 discloses the preparation of a drink possessing carotenoid, alcohol, and a surfactant but is not concerned with separating the carotenoid. Sanz et al discloses a process for converting lutein to zeaxanthin in plant extract with a catalyst comprising, for example, an alcohol. However, there is no disclosure therein or anywhere else in the prior art of record for removal of the lutein or zeaxanthin using the surfactant and double organic solvent steps of the instant invention. Yokoyama et al discloses a process wherein carotenoid is removed from the peel of citrus fruit wherein the peel is treated with a soap surfactant (or alcohol) and a particular compound wherein said compound

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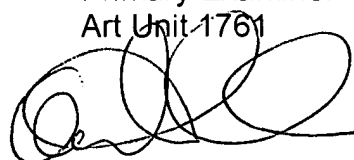
promote the biosynthesis of carotenoids. There is no disclosure nor teaching in Yokoyama et al to modify same to treat a slurry of said peel with water and both an organic solvent and surfactant wherein the slurry is then further treated with a second solvent and liquid is then separated and further divided as specifically set forth in the instant claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Weier whose telephone number is 571-272-1409. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony Weier  
Primary Examiner  
Art Unit 1761



11/10/05

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Anthony Weier  
November 10, 2005